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Recycling Solutions for Every Environment

RCRA PERMITS SECTION

November 1, 1995

FAX / HARD COPY VIA MAIL

FILE COPY

Ms. Sally Safioles
WA Department of Ecology - NWRO
3190 - 160th Avenue SE
Bellevue, WA 98008-5452

Ms. Safioles:

As discussed previously, Burlington Environmental Inc. dba Philip Environmental (Philip) has been asked by Pacific Northern Oil, the current tenant at Pier 91, to relocate two groundwater monitoring wells placed by Philip as part of the ongoing RCRA Corrective Action at Pier 91. The two wells, one shallow and one deep, are upgradient and are included in Philip's monthly water level and quarterly water quality monitoring. The replacement wells are expected to placed within 50 feet of the existing well locations in a cluster well configuration.

Enclosed are the well abandonment and well construction methods to be used. These methods are consistent with the current RFI Workplan (Burlington Environmental Inc., April 1992). The work is scheduled to be completed by Pacific Northern Geosciences, however, Philip will be onsite to oversee the well construction. USEPA X and the Port of Seattle have also been advised of this planned work and provided with this enclosure.

Prior to beginning this work, Philip requests that USEPA and Ecology acknowledge in writing the work proposed herein. Well abandonment is scheduled to begin on Friday, November 3, 1995.

Please contact me at (206) 227-6121 if you have any questions or require further information.

Respectfully,

John Stiller
Project Coordinator

cc: Mr. David Domingo - USEPA X

955 Powell Avenue SW • Renton, Washington 98055
206/227-0311 • Fax: 206/227-6179

PHILIP ENVIRONMENTAL

MEMORANDUM

DATE: **October 31, 1995**

TO: **John Stiller**

FROM: **Andy Maloy**

SUBJECT: **Well Abandonment and Replacement**
Pier 91

In response to our conversation on October 25, 1995 this memorandum documents recommended procedures for abandonment and replacement of monitoring wells CP-105A and CP-105B at the Pier 91 facility. The replacement wells will be designated CP-205A and CP-205B. Although a specific location for the replacement wells has not been established, I understand the most likely site is northwest of their present location.

Abandonment

Monitoring wells CP-105A and CP-105B are constructed of two-inch diameter schedule 40 PVC riser and screens. Abandonment of these two wells will be completed by overdrilling and removing the well casing, filling the annular seal with bentonite grout, and removing the surface completions. Since installation of the two wells consistent with WAC-173-160-500 cannot be verified, abandonment will conform to WAC 173-160-415.

Installation

CP-205A

The shallow well will be installed using 4 1/4-inch hollow stem augers and will be sampled every 2.5 feet using a split spoon sampler. Well materials will consist of two-inch diameter flush threaded Schedule 40 PVC riser, and ten feet of 0.010-inch slotted PVC screen. The well screen will be positioned to permit intersection of the top of the water table. Total depth will be dependent upon the location of the well, but will be approximately 14 feet below ground surface. The sand pack will consist of 10-20 silica sand. Although WAC 173-160 requires at least three feet of bentonite, the shallow water table at the site may preclude adhering to these guidelines. If this is the case, a variance for well construction will be filed with the Department of Ecology. In

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any case, the annular seal will consist of at least one foot of bentonite chips or pellets. The well will be completed with a flush-mount well monument.

CP-205B

CP-205B will be installed using double casing techniques. The boring will be advanced using 4 1/4-inch hollow stem augers until the upper confining unit (silty sand) is encountered. The upper confining unit is estimated approximately 20 feet below ground surface. Samples will be collected at 2.5 foot intervals using a split spoon sampler. The 4 1/4-inch augers will be withdrawn, and 10 1/4-inch hollow stem augers will be used to ream the boring. Nine-inch diameter mild steel casing will then be installed through the augers to a depth at least two feet below the top of the upper confining unit. The steel casing will then be grouted in place, and the augers withdrawn from the boring. After allowing the grout to set for at least 24 hours, the boring will be advanced using 4 1/4-inch augers until the deep sand unit is encountered (estimated to be about 35-40 feet below ground surface). The boring will be continuously sampled using a split spoon sampler. The total depth of the boring will be sufficient to allow placement of the well screen within the deep sand unit. Well construction and materials will be consistent with well CP-205A.

These well installation procedures are essentially equivalent to well installation techniques used during the most recent RFI work conducted in 1993. The only difference is the use of hollow stem auger drilling techniques to complete the lower portion of CP-205B. While the upper portion of the deep wells installed in 1993 were completed using hollow stem augers, the lower portions were completed using cable tool techniques. Cable tool drilling was used because hollow stem augers would not fit inside the 8-inch diameter surface casing used for those wells. Since CP-205B will be installed using 9-inch diameter surface casing, hollow stem auger drilling techniques can be used, allowing easier, faster, and generally more effective continuous sampling of the lower portion of the well.

Well Development

No sooner than 24 hours following installation, each well will be developed by a combination of surging and pumping. Development will continue until all water introduced into the well during drilling (if any) has been removed, and until the development water is free of excess turbidity. All development water will be contained, and will be disposed in accordance with applicable regulations.

Well Surveying

After completion, each well will be surveyed to establish vertical control within 0.01 feet, and horizontal control to within 0.1 feet. The survey coordinates will be tied into the existing site survey to allow accurate location on the site map, and to establish top of casing elevations using the site datum.

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Inter-Company/Departmental Communication

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11/7/97

November 7, 1997

CERTIFIED MAIL

Mr. David Domingo
U.S. E.P.A., Region X
1200 Sixth Avenue M/S WCM-121
Seattle, WA 98101

Re: Notice of Personnel Change

The purpose of this correspondence is to inform you that I have replaced John Stillers as the contact person for corrective actions' issues for Philip Services Corporation's Washington RCRA facilities, including: Georgetown, Pier 91, Washougal, Tacoma and Kent. Keith Lund handles all regulatory compliance issues for these facilities.

If you have any questions, please call me at (425) 227-6121.

Respectfully,

Carolyn Mayer
Corrective Actions Specialist